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Integrating educational technology into Lesotho Secondary Religious Studies: A conceptual exploration of practical challenges and opportunities

Lehlohonolo Kurata *, Mampota Selialia, Rethabile Rosemary Molefi and Senoni Francinah Rateronko

Department of Languages and Social sciences, Faculty of Education, The National University of Lesotho.

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Abstract

The use of educational technology (Ed-tech) is becoming more prevalent in shaping teaching methods to meet the needs of modern learners. This study examines how Ed-tech is integrated into secondary Religious Studies classrooms in Lesotho, using the Technological Pedagogical Content Knowledge (TPACK) framework as a guide. By reviewing global literature, it looks at the opportunities and challenges of incorporating digital tools into Religious Studies, a subject aimed at developing social skills and moral values. Research suggests that technology can improve student engagement, critical thinking, and ethical reasoning through platforms like cloud-based learning and multimedia resources. However, Lesotho faces obstacles in implementing Ed-tech, including inadequate infrastructure, insufficient teacher training, and outdated educational policies, which leads to a digital divide, especially in rural areas with limited access to electricity and the internet. The study concludes that while Ed-tech has the potential to transform Religious Studies education, addressing these systemic barriers is crucial for effective implementation. It recommends improving technological infrastructure, providing professional development for teachers, updating curriculum policies to meet 21st-century requirements, and integrating digital literacy into the Religious Studies curriculum. Overcoming these challenges will not only bridge the digital divide but also enhance the teaching and learning of Religious Studies, equipping learners with skills to navigate the ethical and digital complexities of the modern world.

Keywords: Practical challenges; Educational technology; Opportunities; Religious Studies

1. Introduction

Technology integration in education is increasingly vital, offering transformative potential through breakthroughs like the Internet of Things (IoT), machine learning, and artificial intelligence (AI) (Molefi et al., 2024). Notably, the history of technology integration in education dates back to the 20th century, where early innovations included radio and audiovisual tools, which aimed to improve educational accessibility and quality (Almakaty, 2024). Recently, there has been a growing interest in how technology can enhance teaching and learning experiences. Indeed, technology has made significant strides in education by providing interactive experiences such as virtual environments, experiments, and simulations (Selialia et al., 2023; Thaanyane & Jita, 2024). Lesotho, like many nations, is embracing these technologies to enhance secondary education (Lisene, 2017; Molefi & Ayanwale, 2023). It is therefore imperative to investigate how these educational technologies are relevant to enhance the teaching and learning Religious Studies in Lesotho secondary schools.

Supporting the need for technology integration in education, leading organizations advocate for technology integration in education. For instance, the UN's 2030 Agenda for Sustainable Development includes 17 Sustainable Development Goals (SDGs), with SDG 4 emphasising the importance of inclusive, high-quality education for all. According to Stabback (2016), quality education should equip students with relevant 21st-century skills, including technological

* Corresponding author: Lehlohonolo Kurata

competencies. Similarly, the African Union (AU) Agenda 2063 aspires for well-educated citizens underpinned by science and technology (AU, 2015). The Southern African Development Community (SADC) also advocates for developing 21st-century skills in education, specifically emphasising access to quality education and skills development (SADC, 2020). This emphasis on educational technology integration underscores the significance of this integration therefore calling for an investigation on the challenges that may hinder effective integration through Lesotho secondary schools.

As a member of both the UN and SADC, Lesotho has responded to these international policies through its National Strategic Development Plan (NSDP) II (2023/24 - 2027/28). Interestingly, this plan aims to strengthen ICT and adopt the Internet of Things (IoT) in line with global trends, emphasising the development of relevant technological skills (World Food Programme [WFP], 2024). In alignment, Lesotho's Education Sector Plan (ESP) 2016-2026 seeks to improve access to quality secondary education through ICT solutions (MoET, 2016). Furthermore, the Lesotho Basic Education Curriculum Policy (LBECP) 2021 highlights the importance of developing core competencies, including digital literacy and effective communication skills (MoET, 2021). These initiatives reflect Lesotho's commitment to leveraging educational technology in teaching and learning.

Despite these efforts, challenges remain in effectively incorporating educational technology into pedagogical practices. One significant challenge is the digital divide, characterised by socioeconomic disparities (Makumane & Mpungose, 2022; Morena et al., 2024). This divide creates inequities in access to technology, especially in subjects like Religious Studies. Additionally, the readiness to adopt technology and the professional development of teachers is crucial for successful implementation (Dlamini, 2023; Taolane, 2023). Furthermore, Kurata et al. (2022) conducted a study to investigate the extent to which secondary Religious Studies in Lesotho contribute to 21st-century skills. The study indicates that digital skills are the least promoted skills by Religious Studies.

While existing studies have examined various aspects of educational technology integration in Lesotho, there is a notable gap in research specifically focusing on its impact on teaching and learning in Religious Studies. For instance, a study by Kurata et al. (2022) only analysed the Religious Studies syllabus to determine the extent to which its content contributes to the promotion of 21st-century skills. Consequently, limited attention has been given to exploring the unique opportunities that educational technology could offer for enhancing Religious Studies, particularly in developing critical thinking, ethical reasoning, and multicultural understanding among students.

This paper, therefore, aims to bridge this knowledge gap by engaging in a conceptual analysis of the practical challenges and opportunities associated with integrating educational technology into Lesotho Secondary Religious Studies. The researchers argue that such integration presents promising prospects for a technology-driven future in Lesotho's secondary education system. Specifically, incorporating technology into Religious Studies could enhance relevant skill development. Consequently, this paper advocates for a comprehensive analysis of both the practical challenges and opportunities arising from this integration. Such an analysis could pave the way for sustainable educational technology integration, ultimately fostering successful skill development through secondary Religious Studies.

2. Literature review

2.1. Theoretical framework

This study is framed within the Technological Pedagogical Content Knowledge (TPACK) framework. Mishra and Koehler (2006) indicate that this framework was developed to extend Shulman's concept of Pedagogical Content Knowledge (PCK) by incorporating technology as a crucial element in effective teaching. In addition, they further indicate that this theory identifies three core areas of knowledge: Content Knowledge (CK), Pedagogical Knowledge (PK), and Technological Knowledge (TK). According to Graham (2011), TPACK goes beyond simply adding educational technology to the curriculum; rather, it encourages teachers to consider how technology, pedagogy, and content work together to create more engaging learning experiences.

Therefore, this study addresses the opportunities and challenges of integrating educational technology into Religious Studies, a subject that necessitates an understanding of both content and pedagogy to promote intended social competencies. The TPACK framework is particularly suitable because it offers a structured way to investigate how CK, PK, and TK interact, thereby facilitating an analysis of the practical challenges and opportunities associated with educational technology integration in Religious Studies. Moreover, the TPACK theory guided the literature search, which explores existing research on educational technology integration in education to examine the intersection of Religious Studies content, pedagogy, and technology. This search also included literature on the use of digital tools in teaching Religious Studies, effective pedagogical strategies, and the challenges and opportunities related to educational

technology use in classrooms. Consequently, this approach ensures a comprehensive understanding of how educational technology could be effectively integrated into Religious Studies.

2.2. Global adoption of educational technology in Religious Studies classrooms

The integration of educational technology in Religious Studies classrooms has been recognized as a valuable opportunity to enhance both teaching and learning in this field. Research by Rusdi (2023) in Indonesia emphasises the necessity of a thoughtful pedagogical approach when incorporating educational technology into Religious Studies. This research stresses the positive effects on students' moral development and their understanding of religious values, thereby demonstrating that educational technology could assist students in addressing questions related to the subject.

Similarly, findings reported by Mazrur et al. (2023) indicate that students exhibit positive behavioural intentions toward using digital technologies in Religious Studies. Moreover, Desiana et al. (2024) found that cloud-based learning platforms, such as Google Classroom, significantly affect the subject by revolutionising traditional teaching methods and facilitating more interactive and engaging learning experiences. These views collectively suggest that integrating educational technology into Lesotho's Religious Studies could enhance its teaching and learning. Furthermore, the adoption of technological tools such as smartphones, smartboards, and laptops makes the integration of educational technology more accessible.

In Vietnam, a study by Tran and Nguyen (2023) revealed that while most respondents are open to the application of artificial intelligence (AI) in Religious Studies, this acceptance is not universal, particularly among Church personnel. Interestingly, only Generation Z appears fully prepared to embrace this innovation. However, Alemi et al. (2020) noted that the application of educational technology in Religious Studies remains under-researched. In light of this, one could agree with Alemi et al.'s (2020) assertion that the application of educational technology in Religious Studies is still insufficiently explored. While it is true that there are some studies focusing on educational technology in Religious Studies, the majority of research has predominantly focused on Islamic contexts and countries. Consequently, this literature gap highlights the need for further exploration of the applicability of educational technology in Christian Religious Studies, particularly in regions like Lesotho, where the teaching and learning of Religious Studies takes a unique approach.

2.3. Context of Educational Technology Integration in Lesotho Religious Studies

In Lesotho, the integration of technology in education is increasingly vital, aligning with Sustainable Development Goal (SDG) 4, which aims to promote quality education and essential skills for the global market (Mokotso, 2024; Mphunyane, 2021). Furthermore, the African Union's Agenda 2063 emphasises the importance of Information and Communication Technology (ICT) in educational frameworks. In response to these initiatives, Lesotho's Education Sector Plan (ESP) 2016-2026 supports educational technology initiatives aimed at improving access to quality secondary education (MoET, 2016).

Notably, Ayanwale (2023) revealed that secondary school students in Lesotho generally have positive attitudes towards learning AI, with subjective norms, confidence, and self-efficacy significantly influencing their intentions to engage with AI. Thus, the acceptance of AI among Lesotho secondary school students indicates that AI also influences Religious Studies. Moreover, several Religious Studies teachers are witnessing students' use of AI to write assignments and conduct researches during classrooms.

However, the integration of educational technology in Lesotho faces several challenges, including limited funding, inadequate professional development, and inconsistent implementation across schools (Makumane, 2023; Mofana & Nkhi, 2024; Morena et al., 2024). Religious Studies in Lesotho holds a unique position, being widely integrated across secondary schools due to historical factors, to promote social competencies for sustainable development. Nevertheless, Kurata et al.'s (2022) study indicates that digital skills are among the least emphasised competencies in the Religious Studies syllabus, which primarily focuses on information retrieval skills. This, therefore, indicates that the use of educational technologies in Religious Studies still faces significant challenges and needs to be addressed for the subject to contribute effectively to sustainable development.

In addressing the challenge of educational technology integration in Religious Studies, Mokotso (2024) suggests that we should revise the curriculum to be more inclusive of diverse religious traditions, expand its implementation across all schools, and adopt transformative pedagogies.

2.4. Opportunities for educational technology integration in Lesotho's secondary schools

2.4.1. The role of digital literacy in enhancing student engagement in Religious Studies

Recent studies support the integration of digital literacy into educational curricula to enhance student engagement across various disciplines, including Religious Studies. For instance, Pariama (2024) found that incorporating digital literacy in Christian Religious Education significantly improved student engagement, academic performance, and ethical development. In addition, Pariama (2024) highlights that e-tutorial are effective in developing digital literacy skills and making learning more interactive, thereby increasing student interest and participation.

In the context of Lesotho's Secondary Religious Studies, digital literacy can further enhance the accessibility and relatability of teachings through multimedia resources such as YouTube videos, Smartboards, and digital storytelling. As a result, students can actively seek religious information online, which encourages exploration and critical thinking, ultimately leading to deeper engagement with religious content. This perspective is reinforced by Sahlan et al. (2022), who illustrate that students actively seeking religious information online to develop digital literacy correlates with greater academic self-efficacy, which in turn enhances student engagement in complex moral and ethical discussions.

2.4.2. Digital literacy and academic performance in Lesotho secondary Religious Studies

Recent studies highlight the significant role of digital literacy in enhancing academic performance and engagement among secondary school learners (Mphatsoane et al., 2023). According to Farahani et al. (2016), digital literacy empowers learners to independently navigate digital platforms, thereby fostering collaboration and active learning rather than passive learning. Lopez-Islas and Jose (2013), who demonstrate that an improved learning environment and convenient access to digital literacy and ICT have favourable impacts on learners' performance, confirm the correlation between digital literacy and enhanced academic performance.

This is particularly relevant in subjects such as Religious Studies in Lesotho, where the integration of ICT could enhance learners' analytical thinking, digital literacy, and content understanding, ultimately heightening their academic performance. Specifically, digital platforms can provide learners access to a wide array of religious texts, commentaries, and multimedia resources that could deepen their comprehension of complex religious concepts more engagingly. In support of this, Kara (2022) suggests that increased digital literacy and self-directed learning enhance student engagement, ultimately resulting in improved academic performance.

2.4.3. The impact of digital literacy on Religious Studies students' moral and ethical development

Research indicates that Religious Studies content and teaching approaches can cultivate moral values and counteract moral decadence among learners. Specifically, it provides a framework for understanding ethical principles that guide behaviour and relationships. For instance, Religious Studies is essential for instilling moral values and ethical principles necessary for personal development and societal harmony (Afifuddin & Burga, 2022; Kurata, 2024). Tibo and Tobing (2022) further illustrate how Catholic religious' education fosters values like honesty and responsibility, contributing to students' moral development.

Moreover, scholars argue that digital literacy can enhance moral and ethical development. For example, Ribble and Park (2022) suggest that digital citizenship education promotes responsible online behaviour. Thus, incorporating digital literacy into Religious Studies allows teachers to discuss ethical issues from a religious perspective. This is particularly relevant in Lesotho, where digital platforms can provide access to diverse religious texts and ethical discussions. Such exposure encourages students to explore different viewpoints, including various faiths available in the region. Additionally, familiar digital media, such as videos from such as YouTube videos, podcasts, Facebook, WhatsApp, and TikTok can illustrate ethical dilemmas, prompting discussions. Learners can also create videos reflecting ethical scenarios, enhancing their empathy and reasoning skills. Furthermore, social media groups can facilitate collaboration on social justice projects, fostering community engagement. This potential for promoting moral values is supported by Tarsidi et al. (2023), who indicate that enhancing digital literacy leads to better ethical decision-making and responsible behaviour.

2.5. Challenges of integrating Technology into Religious Studies in Lesotho

There is significant evidence that the effective use of technology in Lesotho secondary education schools faces challenges. Selialia and Kurata (2023) indicate that despite efforts to bridge the digital divide in Lesotho and enhance personalised learning experiences, significant obstacles hinder the seamless integration of technology into secondary schools.

2.5.1. Accessibility

A critical initial step toward successful technology integration is ensuring widespread access to the equipment needed to run educational computer programs. For instance, Chere-Masupha (2018) indicates that limited computer lab time—such as just one hour per week in some schools—makes it unfeasible to consistently incorporate educational technology. Moreover, this situation is exacerbated in Lesotho, where Religious Studies and ICT are electives in some schools. This means that only students who choose ICT are entitled to access computer laboratories. Consequently, many teachers and students may perceive that educational technology integration is not applicable in Religious Studies.

In addition, Jacob and Warschauer (2018) highlight a lack of regular and reliable computer access due to limited funding for connectivity. Brandao (2020) underscores the high costs associated with obtaining and maintaining technology infrastructure and software licenses, which often leads some Religious Studies teachers to rely on traditional instructional methods. As a result, this reliance contributes to a digital divide among learners. Indeed, the issue of accessibility remains a major obstacle that could hinder the effective teaching and learning of Religious Studies. Makumane and Mpungose (2022), who emphasize that accessibility challenges are a significant barrier causing the digital divide in secondary schools in Lesotho, further support this perspective.

2.5.2. Limited professional development for teachers

Another obstacle to the integration of technology is the limited professional development available for teachers to keep pace with technological evolution. This challenge manifests in various ways, including inadequate training in the use of technology, a lack of ongoing support for teachers, and insufficient pedagogical strategies that incorporate technology into the curriculum. According to Lisene (2017) and Mohlomi (2022), many teachers in Lesotho lack the necessary skills to effectively integrate technology into their teaching practices. As a result, this is a common struggle for teachers attempting to adopt technology in their classrooms. Limited knowledge and understanding of how to use technology, along with discomfort in its application, often lead to significant challenges for teachers.

Moreover, the provision of proper training for technology integration is rare in the country. Kalanda (2012) and Selepe (2016) note that the Ministry of Education and Training infrequently provides training, citing limited funds. This issue is particularly relevant in Religious Studies, where there is little data indicating workshops aimed at equipping teachers with skills for educational technology integration. Supporting this view, a study by Kurata (2023) argues that presenters in Religious Studies workshops focus primarily on preparing students for summative examinations in Grade 11, with limited emphasis on critical issues such as technology integration.

Consequently, this situation implies a reliance on traditional teaching methods that do not leverage the potential benefits of technology to enhance student learning. Furthermore, Tibo and Tobing (2022) indicate that the absence of structured professional development programs means that teachers often do not receive the ongoing support needed to adapt to new technologies or pedagogical approaches. This lack of professional development opportunities could also hinder Religious Studies teachers' ability to adapt their pedagogical practices to include technology, as Mokotso (2024) suggests they have the potential to enhance the teaching and learning of Religious Studies. Ultimately, this reliance on outdated teaching methods not only diminishes the educational experience for students but also perpetuates a cycle of technological ineffectiveness within Religious Studies classrooms.

2.5.3. No systems in place to utilise technology in the Religious Studies curriculum

Another challenge in technology integration is the lack of clear policies. Atabek (2019) emphasises the absence of guidelines and the slow adaptation by the government. It appears, therefore, that unclear policies create uncertainties, making it difficult to plan and implement technology initiatives effectively. While the Lesotho Basic Education Curriculum Policy (LBECP) of 2021 advocates for the integration of educational technology across various subjects, including Religious Studies (MoET, 2021), researchers such as Taolane (2023) and Thaanyane and Jita (2024) highlight the lack of clear guidance on how to promote technological skills within the curriculum.

In addition, Selialia et al. (2023) underscore this concern by noting that the Curriculum and Assessment Policy (CAP) of 2009 appears not to be aligned with 21st-century educational technology theories, such as connectivism and technology acceptance model. Consequently, the absence of clear policies has led to scenarios where students use AI for

assignments, leaving Religious Studies teachers divided on the ethical implications of such practices. Moreover, another concern raised by Osborne et al. (2020) is that even existing policies may not keep pace with technological advancements. Currently, students are using artificial intelligence (AI) in Religious Studies to write assignments. This development creates a disparity, as teachers lack guidance on whether the use of AI is permissible and ethical, given the absence of a clear policy regarding AI in the Lesotho education system. This lag suggests that outdated educational policies hinder successful technology integration in curricula, including Religious Studies. Without technology in teaching, students miss opportunities to develop essential digital skills, which are crucial for fostering collaborative learning, creativity, and critical thinking (Lisene & Jita, 2018).

Furthermore, the need for clear and updated educational technology integration in Lesotho's secondary schools has been influenced by external factors, such as the COVID-19 pandemic (Makumane & Mpungose, 2022). During the pandemic, the National COVID-19 Secretariat (NACOSEC) announced that all schools should adopt shifting methods, where students attended classes interchangeably based on their respective grades (Ministry of Health, 2020; Mofana & Nkhi, 2024). Ultimately, with the complete closure of schools, teachers were compelled to leverage ICT tools for teaching, even in resource-constrained environments (Morena et al., 2024; Thaanyane & Jita, 2024).

To ensure that learning progressed, virtual lessons were broadcast daily on Lesotho Television (LTV). However, this alternative approach seemed to be a significant miscalculation by the Ministry of Education and Training, as it overlooked the impediments associated with this mode of teaching and learning. Regrettably, Religious Studies lessons were never broadcasted on television, which negatively impacted the teaching and learning of this subject. This situation highlights the need for a comprehensive approach to technology integration that enhances, rather than detracts from, the authenticity and effectiveness of Religious Studies.

2.5.4. Technological infrastructure

The integration of technology into Lesotho's secondary Religious Studies instruction faces numerous obstacles, particularly those associated with technological infrastructure. Specifically, insufficient access to reliable electricity, limited internet connectivity, and a scarcity of digital devices all present significant impediments to the effective use of technology in classrooms. As highlighted by Gebremedhin et al. (2015), facilitating the integration of ICT into the educational process requires access to appropriate resources, including the necessary technological software, hardware, and internet connectivity for teachers.

However, a major challenge for teachers is the inadequate computer facilities and limited internet access (Rosdi et al., 2020). In Lesotho, some schools have received computer donations from foreign countries and government offices. Nevertheless, as Mathipa and Mukhari (2014) point out, the majority of these computers are outdated, often being gifts from companies. Consequently, it would be misleading to claim that technological resources are readily accessible in Lesotho, given that these devices are typically used only for basic computer skills rather than being integrated into broader educational purposes, such as Religious Studies.

Moreover, according to Arifah (2022), the internet offers numerous benefits for learning, including expanded options, rich learning environments, independent and self-paced learning opportunities, access to firsthand information, and the fostering of creativity and innovation. Nonetheless, high-speed internet, crucial for accessing online resources and digital platforms, is often unavailable or unaffordable in much of Lesotho, particularly in many rural schools. Ayanwale et al. (2023) support this by noting that many regions in Lesotho lack access to electricity, leaving both schools and homes without essential Information Communication Technology (ICT) infrastructure, such as Wi-Fi availability. As a result, integrating technology into Lesotho's secondary Religious Studies becomes increasingly challenging, as online resources and digital platforms are essential components for modern educational approaches.

3. Conclusions and Recommendations

The integration of educational technology (Ed-tech) into Religious Studies in Lesotho presents both opportunities and challenges. Ed-tech has the potential to enhance student engagement, promote moral and ethical development, and improve academic outcomes. Global research highlights the effectiveness of digital platforms, multimedia resources, and cloud-based tools in creating interactive learning experiences. The TPACK framework emphasises that successful technology integration requires a balance of content knowledge (CK), pedagogical knowledge (PK), and technological knowledge (TK), which can stimulate critical thinking and self-directed learning in Religious Studies.

However, significant challenges hinder the effective integration of technology in Lesotho’s secondary Religious Studies classrooms. These barriers include limited access to technological infrastructure, insufficient professional development

for Religious Studies teachers, and a lack of clear policies supporting Ed-tech. In rural and under-resourced schools, unreliable internet access and electricity further exacerbate the digital divide, preventing many learners from benefiting from modern digital tools.

While national policies like the Education Sector Plan (ESP) and the Lesotho Basic Education Curriculum Policy (LBECP) advocate for technology integration, a gap remains between policy intentions and implementation. Religious Studies is often underrepresented in Ed-tech initiatives, leading to disparities in technology use across subjects. Additionally, the limited use of artificial intelligence (AI) restricts Religious Studies learners' opportunities to develop essential 21st-century skills. Addressing these systemic challenges is crucial for harnessing Ed-tech as a powerful tool to enrich Religious Studies and enhance its relevance in the digital age.

This paper therefore recommends the following for the efficient use of Ed-tech in teaching and learning of Religious Studies:

- To address accessibility challenges, the Ministry of Education should invest in upgrading technological infrastructure, ensuring that all schools have access to essential tools such as computers, internet connectivity, and smartboards.
- Ongoing, comprehensive professional development programmes should be provided for Religious Studies teachers, focusing on integrating Ed-tech into pedagogical practices. Training should emphasise strategies for enhancing Religious Studies learners' engagement and improving instructional methods in Religious Studies.
- The government must establish clear policies to guide the integration of Ed-tech in Religious Studies, aligning these initiatives with contemporary educational theories such as connectivism and technology acceptance model. The curriculum should be revised to prioritise digital skills and explore the ethical implications of emerging technologies, including artificial intelligence.
- Schools should integrate digital literacy into the Religious Studies curriculum to enhance learners' engagement, critical thinking, and moral reasoning. This can be achieved by incorporating multimedia resources, online platforms, and digital storytelling into lesson plans.
- Efforts should be made to ensure reliable electricity and internet access, particularly in rural schools, to enable all Religious Studies learners and teachers to benefit from technological advancements. This will enhance the practical application of educational technology across various subjects, including Religious Studies.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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